

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: November 9, 1981

Forwarded to:  
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FRANCE

SAFETY RECOMMENDATION(S)

A-81-150 through 152

During the 20-month period from July 1979 through February 1981, there have been four occasions in which an Air France Concorde operating from Dulles International Airport or Kennedy International Airport was involved in a potentially catastrophic incident resulting from blown tires during takeoff. The repetitive nature of these incidents and, in particular, crew response in the more recent incidents is of serious concern to the National Transportation Safety Board.

On June 14, 1979, an Air France Concorde experienced blowouts of the Nos. 5 and 6 tires on the left main landing gear on takeoff from Dulles International Airport, Washington, D.C. Tire debris and wheel shrapnel resulted in damage to the No. 2 engine, puncture of three fuel tanks, and severance of several hydraulic lines and electrical wires. Additionally, a large hole was torn in the top wing skin which covers the wheel well area. As a result of the Safety Board's findings in the ensuing investigation of that incident, several mechanical and operational recommendations were being considered; however, prior to a final decision on their issuance, a second blown tire incident occurred on July 21, 1979, involving a takeoff from Dulles. The similarities between the two incidents led to immediate voluntary corrective action by the appropriate authorities. An Airworthiness Directive, issued by the Director Generale de l'Aviation Civile, and a Technical Information Update, issued by Air France, revised procedures, in part, as follows:

- 1) Required inspection of each wheel/tire for condition, pressure, and temperature prior to each takeoff.
- 2) Advised crews that when a wheel/tire problem is suspected (particularly when a bang is heard), the landing gear should not be raised.

Although there was general agreement as to the validity of the corrective action among the various parties involved in the investigations, operational experience since that time casts serious doubt on the effectiveness of the corrective action. Despite the requirement for increased tire inspections and monitoring, there have been two additional incidents in U.S. operations of the Concorde involving blowouts during takeoff:

October 1979 - F-BVFD had a tire failure during takeoff from Kennedy International Airport. On this occasion the Nos. 7 and 8 tires failed; despite the extant recommended practice to the contrary, the gear was retracted and the flight continued to Paris. No investigation was conducted by either the Safety Board or the French Bureau Enquetes Accidents at the time of the incident.

February 1981 - F-BTSD incurred blown tires during takeoff from Dulles International Airport following a stop on a Mexico City to Paris flight. On this occasion the crew also disregarded the Technical Information Update and raised the landing gear. Engine problems resulting from damage forced the crew to land at New York. Preliminary information indicates that there was no preparation of the passengers for a possible emergency landing and evacuation. Additionally, the cockpit voice recorder (CVR) on the aircraft was inoperative and had been for several flights, including a layover at Paris.

The first two blown tire incidents in June and July of 1979 raised serious questions about the "quick turn around" aspects of the Concorde operation at Dulles. Investigation of the more recent incidents has led to concern about a more tangible problem not specifically related to the "quick turn around." In each of the more recent incidents, the flightcrew was aware that a tire(s) had blown; they experienced at least transient engine problems; yet critical operational procedures were either ignored or not followed.

Of primary concern, the crews raised the landing gear, even after the company formally had adopted a procedure recommending that the crew not retract the landing gear unless it was imperative for operational reasons. The consequences of such action (hydraulic failure, fire, explosion, landing gear sticking in a retracted or partly retracted mode, etc.) are obvious and could be catastrophic. Therefore, the recommended procedure should be made mandatory and should be included in the Emergency Section of the aircraft flight manual, where it would be stressed in training, practiced in the simulator, and covered on each proficiency check.

Another matter of concern involves the failure of the cockpit crew in each incident to advise the cabin crew of the emergency details. Despite the hazards involved in any landing following any tire problem, the captains did not instruct the cabin attendants to prepare the passengers for an emergency landing. Such action should have included:

- 1) Advising the passengers of the existing mechanical problems;
- 2) Positioning "able-bodied" passengers next to emergency exits;
- 3) Complete briefing of all occupants on exits, signals, equipment operation, etc.; and
- 4) Briefing on other possible actions expected of passengers before and after impact, and for egress.

One further matter of serious concern involves the flightcrew's noncompliance with procedures regarding the inoperative condition of the CVR on F-BTSD during the February 1981 incident. The last recorded information on this equipment was an exchange with New York Departure Control during a previous New York to Paris flight. While the CVR has no direct relationship to the safe operation of the aircraft, it is a checklist item,

and the flight handbook prohibits continuing flight beyond a major repair facility if the CVR is inoperative. The Safety Board is concerned that crew training was either insufficient to impress crewmembers with the necessity of adherence to the flight handbook, or the prescribed checks do not accurately establish the condition of the CVR. This situation should be corrected.

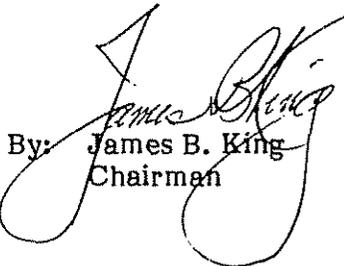
Therefore, the National Transportation Safety Board urges the Bureau Enquetes Accidents to take action to achieve the following:

Require the incorporation into the Emergency Section of the Airplane Flight Manual for Air France Concorde operations, a procedure for suspected/known tire failure on takeoff which includes mandatory requirement to leave the landing gear extended, to return to the takeoff airfield, to advise the cabin attendants of intended action, and to brief passengers for a precautionary landing. (Class II, Priority Action) (A-81-150)

Direct the development and adoption by Air France of training plans which stress flight and cabin crew coordination prior to precautionary or abnormal landings. (Class II, Priority Action) (A-81-151)

Develop a procedure to positively check the recording capability of the CVR prior to flight, and to enforce the international standard and company procedure requiring an operative CVR for dispatch from primary bases. (Class II, Priority Action) (A-81-152)

KING, Chairman, DRIVER, Vice Chairman, and McADAMS and BURSLEY, Members, concurred in these recommendations. GOLDMAN, Member, did not participate.

  
By: James B. King  
Chairman